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tual pressure against fifty-six pounds—or, in round numbers, eight hundred weight counteracted by nothing except the strength and nature of the iron. The 'patent spiral spring buffer,' as invented by T. F. Bergin, Esq. has removed several of the objections relative to the construction of railway coaches here stated, inasmuch as it is entirely supported from the centre of the axles, the weight of which, consequently, causes the axle to revolve freely, and with a degree of steadiness and perfection never before attempted or thought of.

#### RAILWAYS IN IRELAND.

The success of the Manchester and Liverpool Railway in England, and of the Dublin and Kingstown Road in our own country, has given a great stimulus to the speculation in, and projection of similar undertakings. The importance and necessity of rapidity, and certainty of communication between the several parts of a country, the seat of a vast and increasing commerce, having exhausted the utmost powers of the old systems of locomotion; any means of accelerating the rate of travelling, or of conveying goods, were gladly adopted. But, notwithstanding the improvements of roads and carriages, and the removing of all outward impediments, the natural limits of animal speed could not be overcome. Hence, the mercantile community with eagerness seek to avail themselves of the only substitute for horse power, which is at present applicable to the purposes of rapid communication—steam carriages moving on iron railways. Steam carriages on common roads have not attained, we believe, at their highest velocity, a speed equal to the ordinary rate of railway travelling. We have no doubt, their swiftness will be much increased; but in the meantime, improvements will also have been effected on railroads, the engines on which may, indeed, be accelerated to any degree of speed. Dr. Lardner sees no obstacle to prevent fifty or sixty miles an hour becoming the ordinary rate on railways. It is to be observed also, that the engine on the common road, moving at ten or twelve miles an hour, draws with it but a single carriage; while an equal weight can be drawn on a railroad at least thirty miles an hour.

Such is the general confidence in what has already been, and may be, accomplished on railways, that the public eagerly embrace any railroad project brought before them. According to Mr. Vignoles, the engineer, there are in Great Britain 250 miles of railways "in profitable operation;" 400 miles in progress, and Companies formed or forming for the construction of 1400 miles more. But this adventurous spirit of speculation may be carried too far; ignorant persons may be led rashly to embark in railroad schemes, which probably will never be accomplished, and into which none should enter without due examination of the likelihood of success. The *railroad mania* has hitherto been confined to England; in this country, indeed, there prevails an apathy, and a timorous reluctance to engage in great speculations of the kind; arising, without doubt, from the failure of almost every public work, hitherto undertaken in Ireland. Our design, therefore, is briefly to lay before our readers such information as may assist the formation of opinion on the probable advantages and results of such works, as well as on the comparative merits of those which have been already proposed. The first and second reports of the Committee on Public Works in Ireland, which sat in August last, and of which, Mr. Lynch, the member for Galway, was chairman, has been just printed, and contain a mass of most valuable evidence on the subject of this article, as well as on many other points connected with the improvement of Ireland. These reports form the chief sources and authority for the statements which follow.

In the preceding observations, we have given some of the reasons for the preference of railroads to other modes of transport; and this being almost universally acknowledged, we do not think it necessary to enter further on this part of the subject. There are some objections to their adoption in Ireland, which we shall briefly notice. The unwillingness of the public to vest their money in these works, the cause of which we have already men-

tioned, will, there is no doubt, disappear, if the schemes proposed exhibit fair prospects of a return. And no small encouragement is afforded by the success of the only railroad, as yet executed in Ireland, whose shares, on which £60 have been paid, now sell at £84. The immediate advantages of the Dublin and Kingstown Railway, Mr. Pim is right in thinking, will be equalled by the benefit it will confer, by tending to remove the common opinion, that no great public work can succeed in Ireland. There is in the country, capital sufficient for all the schemes which have, or may be put forward: many of the shares in the English speculations have been purchased by Irishmen—500 shares in the London and Birmingham road were quickly sold here; and in other English undertakings we have shown equal readiness to assist. Mr. Pim, who is a stockbroker, as well as treasurer of the Dublin and Kingstown Railway, conceives that a million, (the amount he recommends to be subscribed for the Valentia Railroad) can easily be procured in Ireland. If Irishmen hesitate to advance their funds for these objects, the capital will be readily obtained in England. In that country about £50,000 of the stock of the Kingstown Railway were purchased; and almost the whole of the shares, to the amount of a million, of a company for making a trainroad between Waterford and Valentia,\* has been already subscribed in Bristol, London, and other towns in England, very few having been taken in Ireland. It has been alleged too, that railways in Ireland will be exposed to the blind and lawless violence of the country people, who will do their utmost mischief to thwart these projects, by injuring the roads, and rendering them impassable. Mr. Pim's evidence applies strongly to this point: "Notwithstanding many predictions, there never was any attempt made to injure our works on the Dublin and Kingstown Railway, either during their construction, or since they have been opened." They are driven to these outrages by their distress, which the execution of a railroad will do much to remove; as Mr. Pim observes, "we always find the people tranquil, when well fed." Besides, the novelty and strange aspect of that might-monster, the steam engine, in rapid motion, will fill them with admiration, and inspire them with respect for the means by which such wonders are accomplished. The number of attendants too, which the nature of a railroad constantly demands, will furnish no inconsiderable protection.

Mr. Pim and Mr. Cubitt state, that the Irish workman is in every respect equal to the English, when once taught the operations necessary, which may be effected by the mixture of a few skilful men amongst them: 1 or 2 in 100 was sufficient with those engaged on the Kingstown road. A great advantage to the country is obtained by the facilities thus afforded for the instruction of labourers, who, in general, when they leave works of this description, receive employment and good wages readily, in consequence of their superior skill. The enginemasters, tending the carriages of the Kingstown Railway, are English, but the company are training others, natives, to succeed them, with a "certainty of success." The progress of railways in Ireland is not impeded by one circumstance, which is a great obstruction to their accomplishment in England. The surface of our native land is but thinly scattered over with those noble baronial castles, and proud ancestral residences of the wealthy, which, with their extensive parks, and rich lawns, thickly cover the sister country, and add so much to its beauty. The gentry are, of course, unwilling to sacrifice their privacy and their fair grounds to the noisy and whirling bustle of a public railroad. No such objection exists here; nay, we find the landlords offering their lands, as free gifts, to the railways; and perhaps this is the first instance of Ireland's deriving benefit from her gentry being absentees.

The advantages of rapid communication between distant parts of the country need not here be enlarged on; and how imperfect are the modes of travelling in many of the provincial parts of Ireland, must be known to all. From the number of conveyances at present employed in

\* This road is for carriages drawn by horses, conveying goods at fifteen or sixteen miles an hour.

any part of the country, we cannot form even a tolerably correct calculation of the extent to which the trade, and intercourse by passengers, will be carried, by the construction of railways. All great improvements in the methods of transport, through the facilities afforded by cheapness, speed, and certainty, increase the communication in a degree manifold more than is generally anticipated. "Railways," to use Mr. Vignoles' expression, "create their own sources of revenue." The number of passengers conveyed by the Manchester, Liverpool, and by the Kingstown Railroads, far exceed the most sanguine hopes of the projectors. The Stockton and Darlington Railway, on the south border of Durham, carries about 10,000 persons per month, "through a district, which, previous to the formation of the railway, could not support a three horse coach, running three days a week.\*"

It is hardly necessary to speak of the advantages to be derived from the execution of railroads, in the giving employment to the poor peasantry; not merely their temporary labour, while the works are in progress, but also the constant service, which the preservation of the roads, and the increase of commerce and intercourse, will require. Facilities will be afforded for the reclaiming of waste lands, and the draining of bogs; and stimulus will be given to agriculture, to trade, and the arts, by opening markets for the productions of the interior, and providing coal for manufacturing purposes. The swift and easy transport of troops, the rapid conveyance of the mails, the inducements to travellers and tourists to visit Ireland, are a very imperfect enumeration of the minor benefits, which will arise from the formation of roads for speedy and certain communication throughout the kingdom.

We conceive it likely that most railways, uniting the large and busy towns of Ireland, would be successful undertakings; but the degree of probability of profitable returns must depend on local circumstances; and into these it is not our present purpose to enter. Many of the projects, which have been set on foot, appear to us desirable, and deserving of consideration. The schemes which have received the most attention are—the Kingstown and Valentia, those from Dublin to Blacksod Harbour, to Drogheda, to Galway, to Kilkenny, from Belfast to Armagh, from Waterford to Valentia, besides a train-road between the same places. Others have been spoken of, and many more will, no doubt, be published. It is not probable that all of these will be executed; and, therefore, it is the more necessary to have authentic information, in order to decide between the merits of rival speculations.

Without further noticing the others, let us turn to the consideration of the most important of all, the "imperial" project of a railway from Dublin to one of the western ports, and from thence, by steam navigation, of a communication between America and the Old World. Through Ireland, then, would flow the great and continual stream of intercourse which connects two hemispheres. This vast design, far above the local or limited influence of common plans, would, in its consequences, affect not merely Ireland and Great Britain, but would extend its advantages to the northern portions of both Europe and America. The benefits accruing to Ireland from so great a work, and its deep importance in every sense, demand for it our first attention.

The difficulties of the channel navigation, and the defects of the harbour of Plymouth, which is at present the packet station for the mails to America and the South of Europe, have rendered desirable the selection of some other port, by which these might be removed. The object of a ship, bound for America, or the South, is to get far enough out of the channel, so as to be able to tack without fear of the land, and then to stretch to the westward of Cape Finisterre; and in entering the channel, similar caution is observed. In some states of the wind this is difficult, or impossible. Hence, vessels are frequently unable for many days to get clear of the channel, and ships returning are often long delayed in rounding the South Coast of Ireland. By the adoption of a harbour on the west, or south-west of this island,

all the danger and delays of the channel navigation would be avoided. Captain Beaufort, the hydrographer to the Admiralty, states that the establishment of a station at Valentia, would save to sailing vessels four or five days: steamers would gain in proportion. The plan of making this port the station for the foreign mails was proposed, long before the design of the railway was conceived. And many difficulties counterpoising the benefits of the measure there, would be now removed by the construction of the railroad. Coals, if not obtained from Irish collieries, could be cheaply supplied from England. At the time this proposition was suggested, the Knight of Kerry made some calculations of the time and expense of the journey, as follows:—The mail from London would reach Valentia, by common roads, in seventy hours; thence to Halifax, by sailing vessels, in three weeks; by steamers in ten days; the fare from Liverpool to New-York, by the American Packets, is 55 guineas; but by Valentia, the total fare would not exceed £30. The number of persons carried by the Liverpool vessels is annually about 11,000, and by the Falmouth Packets only 240. There is not the least doubt, that by the establishment of railways and steam packets, the fares would be much less than these; and this fact, combined with increased speed and safety, would multiply the passengers manifold.

We can scarcely estimate the advantages to be derived by the empire, from the execution of this project. The desire of shortening the sea voyage, and of avoiding the annoyances and tediousness of the navigation of the narrow seas; and, above all, the rapidity of the travelling, and the valuable saving of time, must bring, by this route, a great proportion of the intercourse between the Canada, the United States, and perhaps of regions more southerly—and the whole of Europe, especially the northern nations. It is satisfactory to know, that the persons who appear most concerned, the Americans, take the same view of this matter, as we have pointed out. Many of them have zealously advocated the establishment of steam packets between New York or Halifax, and some western port of Ireland, (they speak chiefly of Valentia.) The distance from Valentia to New York is about 2700 miles, which, according to Mr. Vignoles, may be traversed in ten or twelve days, by such steamers as ply between Kingstown and Liverpool. The same engineer calculates the journey from London to Valentia, as follows: London to Liverpool, by the railway, in ten hours; average passage to Kingstown, 14 hours; Kingstown to Valentia, ten hours: in all, thirty-four, say, thirty-six hours; and in cases of emergency it may be accomplished in twenty-six hours. "The fact is astounding, almost incredible, but it is undeniable." Thus the mail could be conveyed from London to New York in twelve or fourteen days, while it now occupies about four weeks. England would share largely in the profits of this carrying trade, as most of the Continental travellers, &c. will traverse part of that country, to or from the southern ports.

These are general observations, and will equally apply, whatever be the port selected as the packet station. We have referred chiefly to Valentia, because of it our authorities mostly speak. An officer of the navy has been sent to inspect the several harbours on the western coast; and on the result of his examination, the decision probably will depend. We shall now, therefore, briefly notice some of the plans proposed, stating the leading features of each.

All the engineers recommended, first, the construction of a great "arterial" road from Dublin, across the island, to some western port, in as straight a line as possible, not diverging to the towns, but connected with them by branches, which could afterwards be formed. Three roads have been projected from Dublin—to Valentia, to Blacksod and Broadhaven, and to Galway. Valentia is situated at the extremity of Iveragh, a promontory of the county of Kerry, and is near the south west angle of Ireland. The harbour is formed of a bay, facing the west, at the front of which is an island, which protects it from the weather, and makes two entrances; so that this port is "perfectly accessible at all times of the tide—with every wind, except wind directly off shore, which of course makes smooth water along the shore." Valentia is the most westerly port of Europe, its longitude being 12½°

\* *Mechanics' Magazine*, No. 626.

west of London,  $5\frac{1}{2}^{\circ}$  of Falmouth, and at least  $1^{\circ}$  further west than Finisterre; and "sailing packets," says Mr. Cubitt, the eminent engineer, "can always take their departure from Valentia, with any wind, when they could not get out of the English and Irish Channels." A good map will explain this much better than the most minute description. The line from Kingstown to Valentia is about 200 miles in length; and the expense of construction is estimated by Mr. Pim at £15,000 a mile, or three millions; of which it is proposed, one million should be granted, another lent by government; and the third raised by subscription. The loan to be repaid by instalments before the profits amount to £10 per cent. Mr. Vignoles states—"It is a perfectly practicable line, much less difficult than that between London and Liverpool." The same gentleman divides the proposed road into four sections: 1. Dublin to Maryborough—60 miles. 2. To near Cahir, where it would intersect the Waterford and Limerick railway\*—40 miles. 3. To some point, not yet fixed, near the Dromagh collieries, on the borders of Cork and Kerry—50 miles. 4. Near Killarney to Valentia—50 miles. This line is most favourably situated, as the route to Dublin from all places—from Galway round to Waterford. It passes through a fertile corn country, populous, and thick with busy towns. This road is preferred by the engineers, Messrs. Vignoles, Griffith, and Cubitt.

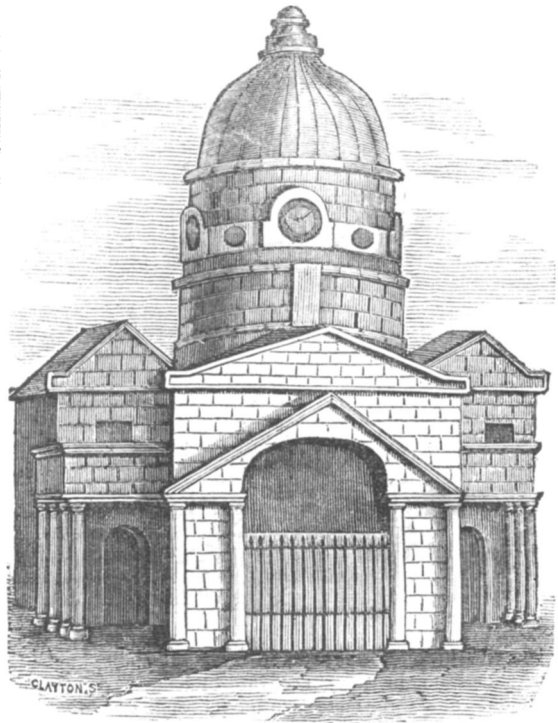
Blacksod Bay is situated at the north west of the county of Mayo, and is formed by a projection of the land, which doubles along the shore, somewhat like the letter T. On the north side of the isthmus is Broadhaven, which it is proposed to unite with Blacksod, by cutting a canal and basin through the separating tongue of land, which is but 600 feet wide. Steam vessels can at all times leave this port. Mr. Bald, an eminent engineer, recommends the adoption of this line; and states its advantages to consist in the level nature of the country from Dublin, and its shortness, compared with Valentia, (about forty miles less,) the "seaward" and projecting position of the harbour, affording facilities for the safe entrance and exit of ships. At the south of the mouth of the bay, rises Achill head, to the height of 2254 feet, which can be seen fifty-eight miles at sea, forming a most conspicuous landmark. The expense is estimated at £10,000 a mile, or two millions.

The line to Galway is much shorter than either of the others, the distance from Dublin, in a straight line, being ninety-seven geographical miles, according to Mr. Bald; and from Dublin to Blacksod, 162. The direction of the Galway road is due west. It is proposed that it should be extended along the shore to Westport. The Knight of Kerry suggests three roads to Valentia—one from Belfast, another from Dublin, and a third from Waterford; and does not think that the construction of that from Waterford, would preclude the necessity of either of the others. The two first would serve for the manufacturing interests of Scotland and England; while along the third would pass the intercourse from London and the Continent.

The distance from London to Valentia, by Waterford, is about 496 miles; by Dublin, 537: Waterford to Valentia, 140; Dublin to Valentia, 207.

We should have observed that the country through which the Blacksod and Galway lines would pass, is not so rich or fertile as that in the course of the Valentia road; moreover, the tract from Dublin to the Shannon already enjoys the advantages of an extensive canal navigation. Viewing these projects, then, only as they relate to Ireland, it is evident that the south-western road would open more of new ground, and of yet untried sources of revenue. We, however, have little doubt of the success of any railway constructed in Ireland, without a rival road too near, particularly such as connect the rising towns of the interior with the eastern ports. But a railway to a western harbour, establishing, across Ireland, the communication between Europe and America, must be

prosperous; and we, therefore, heartily agree with Mr. Pim, who speaks as follows: "I cannot imagine any project which has so many and such strong claims for the support of every person who wishes well to Ireland: there are features of peculiar interest, which I never heard of in any other public undertaking." C. E. S.



MARKET-HOUSE OF DUNLAVIN,  
COUNTY OF WICKLOW.

This building is remarkable for the classical elegance of its architecture, and the commanding situation on which it is built. It was erected, at the close of the sixteenth century, by Robert Tynte, whose family were the proprietors of a large district surrounding the town, a part of which his descendants are still in possession of. The building is constructed of mountain granite, very neatly cut.

On account of the neglected state in which this edifice was suffered to remain, it was falling fast to decay; and might soon be numbered amongst the many ruins of our country, were it not for the good feelings of Lady Tynte Calwell, who, with a praiseworthy anxiety to preserve such a rare structure from ruin, expended £500, during the past year, in having it beautifully and permanently repaired, under the superintendence of Mr. Mark Cross, of Athy. It has been justly remarked, that of the very few of our interesting buildings attempted to be restored, the greater part are only disfigured by the depraved taste of those who undertake the task—a task difficult even to men of the highest attainments in their profession; in the case before us, however, Mr. Cross has left a lasting example of good taste, and well-directed judgment, inasmuch as he has adhered with the greatest precision to the original design of the building.

The bell attached to the Market-house clock, has been made the subject of many a legendary tale in the neighbouring country. It has a fine tone, and bears on the rim the following inscription:—

EST CONVENTVS. S. DOMICI. KILKENÆ ANNO 1047.\*

We shall probably, in a future number, have occasion to notice some of the antiquities of Dunlavin, with its principal historical events. ENNA.

\* A Company for this road was incorporated by Act of Parliament two years ago; but nothing has since been done, though there is not a more favourable line in Ireland.

\* The second figure in the date is read by some as 6, by others as 0.